

2/3 031

UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC-ACCESSION NO--AP0142759

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SIMULTANEOUS RADIOMETRIC AND RADAR OBSERVATIONS, COMBINED WITH OTHER METEOROLOGICAL MEASUREMENTS, AS DEMONSTRATED IN THIS ARTICLE, MAKE IT POSSIBLE TO DETERMINE THE MEAN LIQUID WATER CONTENT OF LIQUID DROP CLOUDS. IF THE TOTAL WATER CONTENT IS DETERMINED FROM RADIOMETRIC MEASUREMENTS AND RADAR IS USED IN MEASURING THE EXTENT OF THE DROPLET PART OF THE CLOUD, THE RATIO OF THESE VALUES WILL GIVE THE MEAN LIQUID WATER CONTENT OF THE DROPLET PART OF THE CLOUD IN THE DIRECTION OF MEASUREMENT BECAUSE THE RADIO EMISSION OF THE CRYSTALLINE PART OF THE CLOUD CAN BE NEGLECTED. WITH SIMULTANEOUS MEASUREMENTS OF ABSORPTION IN A CLOUD AT SEVERAL WAVELENGTH IT IS ALSO POSSIBLE TO ESTIMATE THE EFFECTIVE TEMPERATURE OF THE CLOUD. RADAR MEASUREMENTS, TOGETHER WITH RADIOSONDE DATA, GIVE THE TEMPERATURE DISTRIBUTION IN THE CLOUD AND REFINE THE EFFECTIVE TEMPERATURE. RADAR MEASUREMENTS OF THE DROP SIZE DISTRIBUTION CAN BE USED IN AN INTERPRETATION OF THE RADIO BRIGHTNESS TEMPERATURE OF RAIN. JOINT RADAR AND RADIOMETRIC MEASUREMENTS WERE MADE IN 1966 AT PUSHCHINO USING THE RADIOTELESCOPE OF THE PHYSICS INSTITUTE AT WAVELENGTHS 0.8 AND 1.6 CM AND IN 1968 AT KIMRA USING A RADIO TELESCOPE OF THE CENTRAL AEROLOGICAL OBSERVATORY (ANTENNA DIAMETER 3 M) AT THE WAVELENGTHS 0.8 TO 1.35 CM. THE TOTAL TIME OF CLOUD OBSERVATION WAS MORE THAN 120 HOURS. A RADAR SET IN THE 3-CM RANGE WAS USED. THE RADIOMETRIC AND RADAR OBSERVATIONS WERE ACCOMPANIED BY MEASUREMENTS OF THE METEOROLOGICAL PARAMETERS BY RADIOSONDES. IN ADDITION, THE DROP SIZE DISTRIBUTION WAS MEASURED BY SAMPLING ON FILTER PAPER.

UNCLASSIFIED

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UNCLASSIFIED

PROCESSING DATE--11DEC70

CIRC ACCESSION NO--AP0142759

ABSTRACT/EXTRACT--ALTITUDE OF THE LOWER CLOUD BOUNDARY WAS DETERMINED AND THE RADIO EMISSION OF CLOUDS WAS ASCERTAINED AT WAVELENGTHS 0.8, 1.35 AND 1.6 CM WITH A FIXED ANTENNA WITH MOVEMENT IN AZIMUTH AT A CONSTANT RATE. THE RESULTS OF ALL THESE INTEGRATED OBSERVATIONS ARE GIVEN. THIS EXPERIMENT WITH THE SIMULTANEOUS USE OF THE RADIOASTRONOMICAL AND RADAR METHODS REVEALED THAT THIS APPROACH IS VERY EFFECTIVE IN THE STUDY OF CLOUDS AND PRECIPITATION.

UNCLASSIFIED

USSR

UDC 621.376

BORISOV, A. Yu., GORELIK, A. I., and FAL'TSMAN, A. V., Inter-faculty Laboratory of Bioorganic Chemistry of the Moscow State University

"The Use of the OLMSH-100M Electrooptical Light Modulator With Nonlaser Light Sources"

Moscow, Pribery i Tekhnika Eksperimenta, No 1, Jan-Feb 72, pp 174—176

Abstract: Results of an experimental investigation of the OLMSH-100M electrooptical modulator by its use for light modulation from a nonlaser light source are presented. The working of the modulator was studied in operation by doubled modulation frequency and wave lengths of  $\lambda=365, 405, 436$ , and  $546$  nm and by white light. The modulated light flux was recorded on the FEU-68 photomultiplier with an outlet cathode follower. The optimum parameters of single- and two-lens optical schemata were determined and a comparison with a light modulator on an ultrasonic glass-cell was carried out. The losses in the modulator

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USSR

BORISOV, A. YU., et al., Priory i Tekhnika Eksperimenta, No 1, Jan-Feb 72, pp 174-176

and of the maximum coefficient of modulation  $t$  were studied as function of the divergence angle  $2\alpha$ . The dependence of the relative function  $\gamma = N/N_{\max}$ , where  $N = \beta \cdot t \cdot VS$ , and  $S$  = light flux and  $\beta$  = proportionality factor, on  $2\alpha$  and the focal length of the second lens in the two-lens system are discussed by reference to diagrams showing the advantage of the two-lens system. Two illustr., three biblio. refs.

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USSR

UDC 621.317.799:538.569.4

AKVILONOVA, A. B., GORELIK, A. K., KALASHNIKOV, V. V., KRYLOVA, M. S., KUTUZA B. G., KUKHARSKAYA, N. F., MITNIK, L. M., PUZANOV, V. A., and FROLOV, Yu. A.

"Measuring the Full Absorption in a Cloudless Atmosphere in the 0.55-0.59 Range"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses--collection of works) "Nauka," 1972, pp 8-11 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A422)

Translation: Experimental data is given on the full absorption of radio waves in a cloudless atmosphere in the 0.55-0.59 cm range, with simultaneous recording of vertical profiles for temperature, pressure, and humidity at the observation point. Resume

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USSR

UDC 669.71:621.035

TOVSTENKO, A. F., CHALIK, S. M., GORELIK, A. Ya., LITVINOV, Ye. V., SVERDLIN, V. A.

"Study of New Types of Raw Materials for the Production of the Anode Mass"

Tr. Vses. N-i. i Proyechn. In-ta. Alyumin., Magn. i Elektrodn. prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 71, pp. 10-20. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G155 by the authors).

Translation: A description is presented of various carbon materials used in the production of anode mass. The task of their classification is stated. The stages in the development of the production of raw materials in the USSR and its study at the All-Union Institute for Aluminum, Magnesium and Electrode Industry are studied. The types of cokes and pitches studied are listed and briefly described, and their promise for utilization is estimated. A bibliography of published works performed by the Institute together with other institutions on the investigation of carbon-based raw material is presented.

1/1

1/2 040 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--HEAT GENERATION IN RUBBER SAMPLES UNDER CYCLIC STRESS -U-  
AUTHOR--(02)--MARKOVICH, L.M., GORELIK, B.M.  
COUNTRY OF INFO--USSR  
SOURCE--KAUCH. REZINA 1970, 29(3)-8  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--NATURAL RUBBER, ELASTOMER, SHOCK ABSORBER, CYCLIC STRESS,  
VISCOELASTICITY, HEAT CONDUCTIVITY, MATERIAL DEFORMATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3005/0063 STEP NO--UR/0138/70/029/003/0035/0038  
CIRC ACCESSION NO--AP0132358  
UNCLASSIFIED

2/2 040

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132358

ABSTRACT/EXTRACT--(U) GF-0- ABSTRACT. HEAT GENERATION IN NATURAL RUBBER (I) ELASTOMERS METAL SHOCK ABSORBERS UNDER CYCLIC COMPRESSION WAS EVALUATED, TAKING INTO ACCOUNT THE HYSTERESIS LOSSES RELATED TO A SINUSOIDAL STRESS STRAIN DISTRIBUTION IN A VISCOELASTIC MATERIAL. THE DIFFERENTIAL EQUATION FOR HEAT COND. REQUIRED A CORRECTION FOR DAMPING OF DEFORMATION IN A SAMPLE WITH INTERNAL FRICTION. SEVERAL EQUATIONS WERE DERIVED FOR THE CALC. OF TEMP. IN A I METAL SHOCK ABSORBER. THE ANAL. STUDIES AGREED WITH EXPTL. RESULTS. FACILITY: LENINGRAD. FILIAL NAUCH.-ISSLED. INST. REZIN. PROM., LENINGRAD, USSR.

UNCLASSIFIED

1/2 012 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--KINETICS OF LEAD DISSOLUTION IN ORGANIC ACIDS. II. SOLUBILITY OF  
LEAD SALTS IN ACID SOLUTIONS -U-  
AUTHOR--(03)--CHULANOVA, G.A., GURELIK, G.N., RAVDEL, A.A.  
COUNTRY OF INFO--USSR  
SOURCE--Zh. PRIKL. KHIM. (LENINGRAD) 1970, 43(4), 865-7  
DATE PUBLISHED-----70  
SUBJECT AREAS--CHEMISTRY  
TOPIC TAGS--LEAD COMPOUND, CHEMICAL KINETICS, ACETATE, ORGANIC ACID  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRA--3001/0438 STEP NO--UR/0080/70/043/004/0885/0887  
CIRC ACCESSION NO--AP0126191  
UNCLASSIFIED

2/2 012

UNCLASSIFIED

PROCESSING DATE--20NDV70

CIRC ACCESSION NO--AP0126191

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SOLYS. OF PB ACETATE AND PB TRICHLOROACETATE IN THE AQ. SOLNS. OF THE RESP. ACIDS WERE DETD. IN THE PRESENCE OR ABSENCE OF OXIDIZERS (H SUB2 O SUB2) AT 0DEGREES AND 25DEGREES. THESE DATA ARE REQUIRED FOR CALCG. THE DISSOLN. RATE OF PB IN THESE ACIDS IN THE REGION WHERE SALT REMOVAL IS LIMITING. THE SOLY. OF PB ACETATE IN ACOH INCREASES BY 20PERCENT IN THE PRESENCE OF H SUB2 O SUB2 (AT 25DEGREES, 640 AND 680 G-L. IN 3.4N AND 5N SOLNS. COMPARED TO 521.5 AND 580 G-L. WITHOUT H SUB2 O SUB2). SOLY. DATA ARE TABULATED FOR THE ABOVE AND ALSO FOR PBCL SUB2 IN TRICHLOROACETIC ACID SOLNS. FACILITY: LENINGRAD. TEKHNOL. INST. IM. LENSOVETA, LENINGRAD, USSR.

UNCLASSIFIED

USSR

UDC: 620.193.7

G  
GORELIK, G. A. and ANIKONOVA, Ye. A., State Scientific Research and Planning  
Institute of Mineral Pigments

"Effect of Lead as the Contacting Metal on the Corrosion of Stainless Steels and  
Titanium"

Moscow, Zashchita Metallov, Vol. 6, No. 4, Jul-Aug 70, pp 416-419

Abstract: The occurrence of corrosion instability of stainless steel in a nitric acid solution is described, the phenomenon is explained, and a method for eliminating corrosion is proposed. The study shows that the effect of the contacting metal on the corrosion behavior of stainless steel is governed primarily by the former's capacity to change the stationary potential of the steel in the medium (involved), which strongly depends on the metal's polarizability. The greatest threat lies in contact with low-polarizing metals which impose their stationary potential upon the system. In contact with stainless steel the dissolution rate of nickel in 4% nitric acid is little affected, it increases for lead, and decreases for zinc. Unlike  $\text{HNO}_3$ , in 4% solutions of  $\text{HCl}$  and  $\text{H}_2\text{SO}_4$  stainless steel dissolves in the active state: the electrode potential at  $20^\circ\text{C}$  is  $-0.19$  and  $+0.09$  v, respectively, the dissolution rate at  $95^\circ\text{C}$  is 110 and 35  $\text{g}/\text{m}^2\cdot\text{hr}$ . Here, the contact with lead moving the steel's potential toward more negative values

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GORELIK, G. N., et al, Zashchita Metallov, Vol 6, No. 4, Jul-Aug 70, pp 416-419

(-0.25 and -0.23 v) and, in conformity with regularities of electrochemical kinetics, leads to a lower dissolution rate (to 3.3 and 5.0 gm/m<sup>2</sup>.hr).

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USSR

GORELIK, I. I.

Pravovyye Aspekty Peresadki Organov i Tkaney (Legal Aspects of Organ and Tissue Transplantation), Minsk, "Vysheyshaya Shkola," 1971, 91 pp

Translation:

Table of Contents:		Page
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CSO: 1840-W

- END -

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USSR

UDC: 518.9

SUDZHYUTE, D., GORELIK, L.

"Some Balanced Pairs of Strategies in Games on a Unit Square"

Lit. mat. sb. (Lithuanian Mathematics Collection), 1971, 11, No 2, 343-350 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V777)

Translation: A nonantagonistic game is considered on a unit square with bounded kernels  $K(\xi, \eta)$ ,  $L(\xi, \eta)$ , which satisfy the following conditions: 1) the functions  $K(\xi, 0)$  and  $L(0, \eta)$  are continuous and increase monotonically in the interval  $(0, 1]$ ; 2) the functions  $K(\xi, 1)$  and  $L(1, \eta)$  are continuous and increase monotonically in the interval  $[0, 1)$ . Conditions are given for the existence of balanced pairs in which the spectra of the distribution functions are contained in the set  $\{0, 1\}$  (theorems 1-4) expressed in terms of the values of the functions  $K$  and  $L$  at the corner points of the unit square; the limits  $\lim_{\xi \rightarrow 0} K(\xi, 0)$ ,  $\lim_{\xi \rightarrow 1} K(\xi, 1)$ ,  $\lim_{\eta \rightarrow 0} L(0, \eta)$ ,  $\lim_{\eta \rightarrow 1} L(1, \eta)$  are given. In the case of existence of these balanced pairs of strategies, their form is indicated. Bibliography of five titles. Authors' abstract.

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USSR

UDC 616.15-097.34-078.73-7.1

GORELIK, L. S., Institute of Genetics and Cytology, Academy of Sciences BSSR

"Utilization of Microchambers for Determining Hemolysins in Blood Serum"

Moscow, Laboratornoye Delo, No 11, 1971, pp 680-681

**Abstract:** The examination of a single layer of erythrocytes in microchambers to determine the hemolysin content in antiserum is proposed. Seven narrow strips (3mm) of polyethylene tape are glued to a large (75 by 25 mm) slide. Three 24 by 24 mm cover slides are glued on top of the slide and, as a result, six microchambers are formed. An 0.1 suspension of sheep erythrocytes ( $800 \times 10^6$  in 1 ml) is mixed in a test tube with 0.1 ml of antiserum of corresponding dilution and 0.1 ml of guinea pig complement in 1:10 dilution. Each chamber of the slide is filled with a different dilution of the antiserum. The erythrocytes in the chamber are distributed in a single layer. The edges of the slide are sealed with paraffin and it is placed in an incubator at  $37^{\circ}\text{C}$ . In 30 min, the results of the hemolytic reaction are read. A comparative study showed that this method is more sensitive than "spot" method of hemolysis in. It is also simple and convenient, requires small amounts of antiserum and complement, and little time.

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1/2 022 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--EFFECT OF ISOGENIC LYMPHOID SPLEEN CELLS ON URETHANE CARCINOGENESIS  
IN THE LUNGS OF AF,B,STRAIN MICE -U-  
AUTHOR-(02)-KRASKOVSKIY, G.V., GORELIK, L.S.

COUNTRY OF INFO--USSR

SOURCE--VESTSI AKAD. NAVUK BELARUS. SSR, SER. BIYAL. NAVUK 1970, (2),  
109-11.  
DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MOUSE, LUNG, SPLEEN, CARCINOMA, CARCINOGEN

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY FICHE NO----FD70/605015/E09 STEP NO--UR/0440/70/000/002/0109/0111

CIRC ACCESSION NO--AP0140625  
UNCLASSIFIED

2/2 022

UNCLASSIFIED

PROCESSING DATE--04DEC78

CIRC ACCESSION NO--AP0140625

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. CARCINOGENESIS WAS PRODUCED IN  
MOUSE LUNGS BY URETHANE. LYMPHOID (SPLEEN) CELLS WERE OBTAINED FROM  
NORMAL ISOGENIC MICE AND FROM THOSE GIVEN THE URETHANE. INJECTION OF  
SPLEEN CELLS FROM URETHANE TREATED MICE HAD NO EFFECT ON THE URETHANE  
CARCINOGENESIS IN THE LUNGS. SPLEEN CELLS FROM ISOGENIC NORMAL MICE  
SUPPRESSED INFLAMMATION IN THE LUNGS OF TREATED FEMALES BUT STIMULATED  
ADENOMA FORMATION IN THE MALES. FACILITY: INST. GENET. TSITUL.,  
MINSK, USSR.

UNCLASSIFIED

USSR

UDC: 621.317.725

GORELIKOV, N. I., Candidate of Technical Sciences, GUTSMAN, V. G., Engineer, CHAYKOVSKIY, O. I., Engineer, SHEPTEBAN', R. Z., Engineer

"Digital Comparator Voltmeters"

Moscow, Pribory i Sistemy Upravleniya, No 1, Jan 72, pp 48-49

Abstract: The article describes the F485 and F 486 digital AC voltmeters which operate on the principle of nonsimultaneous comparison of inhomogeneous voltages. The instruments were developed by the cooperative efforts of the Institute of Automation and Electrometry of the Siberian Department of the Academy of Sciences of the USSR and the Special Design Office at the L'vov Electrical Measuring Instrument Plant. A block diagram of the instruments is given, and the operating principle is described. The measurement error in the frequency range from 45 Hz to 20 kHz is no greater than  $\pm(0.1 + 0.1V_X/V_f)\%$  for the F485, and  $\pm(0.3 + 0.2V_X/V_f)\%$  for the F486, where  $V_X$  is the instantaneous value of the measured voltage, and  $V_f$  is the

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USSR

UDC 620.17:669.24

KHARLANOVA, V. M., GORELIK, S. S., and KNIZHNIK, G. S.

"Relationship of the Mechanical Properties of Alloy Kh20N80 to Prior Deformation"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 1, Jan 74, pp 75-76

Abstract: The effect of degree of prior deformation on the strength properties and, especially, creep rate of alloy Kh20N80 was studied. Alloy blanks were cold rolled to 3-30% reduction and recrystallized at 1080° C for eight hours. The most significant factor noted in this study was that the degree of prior deformation has a drastic effect on creep rate of this heat-resistant alloy. For a 5% prior deformation the creep rate is  $1.4 \cdot 10^{-3}/\text{sec}$ .

This value drops to a minimum at 15% deformation ( $0.5 \cdot 10^{-3}/\text{sec}$ ) and then shoots up to a maximum value of  $2 \cdot 10^{-3}/\text{sec}$  for 25-30% prior deformation. The reasons for this variation of creep rate to prior deformation lie in the fact that at 15% deformation the main deformation takes place in the grain boundaries and not in the grain volume, while at 25-30% deformation the

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USSR

KHARLANOVA, V. M., et al., Metallovedeniye i Termicheskaya Obrabotka  
Metallov, No 1, Jan 74, pp 75-76

number of fine grains resulting from crushing of coarse increases drastically  
so as to cause a large increase in the number of lines of slip, thus yielding  
the high creep rate. Three figures, five bibliographic references.

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Thermomechanical Treatment

USSR

UDC: 621.785.79

SPEKTOR, Ya. I., COPELIX, S. S., SPEKTOR, E. N., BOKOVA, T. V., Moscow Institute of Steel and Alloys

"Effect of Preliminary Thermomechanical Treatment on the Structurally Sensitive Characteristics of Construction Steel"

Moscow, Izvestiya VUZov: Chernaya Metallurgiya, No 11, 1972, pp 135-138

Abstract: The purpose of this work was investigation of the influence of different preliminary thermomechanical treatment schedules and individual stages of heat treatment on resistance to small and large plastic deformations, grain orientation and the fine structure of cold-rolled air-quenched structural steel grade KVK42 (0.42% C, approximately 1% Cr, Mn and Si). It was found that the elastic limit of the steel after heat treatment increases with the temperature of intermediate (pre-recrystallization) annealing before quenching in the preliminary thermomechanical treatment cycle, and with the rate of heating prior to quenching. Intermediate annealing before quenching also intensifies the grain orientation as compared with that of steel rolled immediately after quenching. The elastic limit is appreciably increased by intermediate annealing, which is especially noticeable for a higher reduction during rolling.

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1/2 029 UNCLASSIFIED PROCESSING DATE--20NOV70  
TITLE--PRECISION DETERMINATION OF THE LATTICE SPACING OF GERMANIUM USING A  
WIDE DIVERGENCE X RAY BEAM -U-  
AUTHOR-(04)-BELUGINA, N.V., DUBLIK, V.T., GORELIK, S.S., SHVARTSMAN, V.L.  
CCOUNTRY OF INFO--USSR  
SOURCE--ZAVOD. LAB. 1970, 36(3), 306-7  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--GERMANIUM, DIFFRACTOMETER, CRYSTAL LATTICE, ELECTRON,  
METALLURGIC RESEARCH FACILITY/(U)EG100A ELECTRON DEFFRACTOMETER

CCNTRL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAE--2000/0291

STEP NO--UR/0032/70/036/003/0306/0307

CIRC ACCESSION NO--AP0124050

UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--20NOV70

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CIRC ACCESSION NO--AP0124050

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ATTACHMENT IS DESCRIBED  
ALLOWING MEASUREMENTS TO BE CARRIED OUT IN THE ELECTRON DIFFRACTOMETER  
EG-100-A. BY THERMOSTATING TO PLUS OR MINUS 0.5 DEGREES DURING THE  
EXPOSITION AND LOWERING THE VOLTAGE BY 25-30 KV, GE LATTICE SPACINGS  
WERE DETD. WITH AN ABS. ERROR 2 TIMES 10 PRIME NEGATIVES ANGSTROM.  
VALUES FOR ZN AND NI RADIATION AGREE WITHIN 5 TIMES 10 PRIME NEGATIVES  
ANGSTROM.

FACILITY: MOSK. INST. STALI SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

1/2 024 UNCLASSIFIED PROCESSING DATE--09OCT70  
TITLE--KINETICS OF GRAIN GROWTH IN SAMPLES OF ALLOYED FERRITES -U-  
AUTHOR-(03)-GURELIK, S.S., LEVIN, B.YE., NAZARCHIK, N.A.  
COUNTRY OF INFO--USSR  
SOURCE--IZV. VYSSH. UCHEB. ZAVED., CHERN. MET. 1970, 13(1), 132-5  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS  
TOPIC TAGS--GRAIN GROWTH, FERRITE, SOLID KINETICS, NICKEL COMPOUND, ZINC  
COMPOUND, IRON OXIDE, TUNGSTEN TRIOXIDE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1981/0596 STEP NO--UR/0148/70/013/001/0132/0135  
CIRC ACCESSION NO--AT0050603  
UNCLASSIFIED

UNCLASSIFIED

PROCESSING DATE--09OCT70

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CIRC ACCESSION NO--AT00508603

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE KINETICS OF GRAIN GROWTH WERE STUDIED FOR NI SUB0.5 ZN SUB0.5 FE SUB2 O SUB4 WITH AND WITHOUT ALLOYING WITH WO SUB3 AND CUO. THE GROWTH PROCESS WAS STUDIED DURING ISOTHERMAL HOLDS AT 1200 AND 1280 DEGREES. CURVES FOR THE SIZE DISTRIBUTION OF THE GRAINS AND FOR THE DEPENDENCE OF THE MAX. SIZE ON THE HOLD TIME WERE FOUND. AS THE HOLD TIME IS INCREASED, THE AV. SIZE INCREASES FOR THE UNALLOYED SAMPLES, AND NEITHER VERY LARGE OR VERY SMALL GRAINS ARE PRESENT. FOR THE ALLOYED SAMPLES THE GROWTH PROCESS IS DIFFERENT. THERE IS AN UNEVEN GRAIN GROWTH WHICH IS NATURAL TO SECONDARY RECRYSTN. A SMALL PART OF THE CRYSTALLITES BEGINS TO GROW VIGOROUSLY, ABSORBING THE INITIAL GRAINS WHICH WERE EQUAL IN SIZE. AS THE HOLD TIME IS INCREASED, THE LARGE GRAINS BECOME LARGER, THEIR BOUNDARIES BECOME ALIGNED, AND THE SMALL GRAINS BETWEEN THEM ARE ABSORBED. THE SIZE DISTRIBUTION SHOWS 2 WIDELY SEPD. MAX.; CONSEQUENTLY, THERE ARE 2 GROUPS OF GRAINS WHICH DIFFER GREATLY IN SIZE. AS THE HOLD TIME IS INCREASED, THIS SIZE DIFFERENCE INCREASES. THUS, THE SECONDARY RECRYSTN. IS ACCOMPANIED BY A MARKED DIFFERENCE IN GRAIN SIZE, WHICH GRADUALLY DISAPPEARS IN THE COURSE OF THE PROCESS. A CALCN. MADE FOR FERRITES WITH THE COMPN. NI SUB0.5 ZN SUB0.5 FE SUB2 O SUB3 SHOWED THAT THE ACTIVATION ENERGY FOR GRAIN GROWTH IS 80 KCAL-MOLE.

UNCLASSIFIED

USSR

UDC: 518.9

GORELIK, V. A.

"The Principle of the Guaranteed Result in Nonantagonistic Two-Person Games With Exchange of Information"

V sb. Issled. operatsiy. Vyp. 2 (Operations Research--collection of works. No 2), Moscow, 1971, pp 102-118 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V780)

Translation: The author considers a nonantagonistic two-person game with advantage functions  $F(x, y)$ ,  $G(x, y)$  respectively. Player I, knowing  $F$  and  $G$ , selects a strategy  $x \in X$  and reports it to player II who, using the information he has obtained, acts rationally, i. e. he selects a strategy  $y \in Y$  which ensures  $\max G(x, y)$ . As payment for the information, player II may follow the principle of goodwill, i. e. select a  $y_0(x)$  which ensures  $\max F(x, y_0(x))$ . A relation is established between the optimum strategies  $x_0(x)$

of the players (in the form outlined above) with points of equilibrium in a bimatrix game. Necessary conditions are formulated for the optimum

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USSR

GORELIK, V. A., Issled. operatsiy. Vyp. 2 Moscow, 1971, pp 102-118

in games of class  $C^2$ . Examples are given. An example is investigated of an economic situation without strict competition. A. Mikhaylova.

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USSR

UDC: 621.373:530.145.6

BYKOVSKIY, V. F., GORELIK, A. V., KULIKOVA, T. A., KUKHMISTROV, V. S., OSTAPENKO, Ye. P., and SHEVCHENKO, Yu. N.

"Exciting Ion Lasers With an A-C Current of Industrial Frequency"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazrjadn. pribory  
(Electronic Engineering, Scientific-Technical Collection, Gas  
Discharge Devices) 1970, No. 3(19), pp 28-32 (from RZh-  
Radiotekhnika, No. 3, March 71, Abstract No. 3D251)

Translation: The possibility of exciting ionic lasers with an a-c current of industrial frequency is demonstrated. The peculiarities of their operation in single- and triple-phase excitation are investigated. Author's abstract

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USSR

UDC 621.373.530.1-9.6

GORELIK, A. V.

"On the Heat State of a Positive Gas-Discharge Column in the Case of Longitudinal Gas Injection"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Technology. Scientific and Technical Collection. Gas-Discharge Devices), No 1, 1970, No 1 (17), pp 37-41 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No 20413c

Translation: An analytical expression is derived and a graph is plotted for calculating the distribution of radial temperature drop of the gas with respect to the length of the discharge tube as a function of the rate of gas injection along the axis. Resumé.

1/1

- 88 -

1/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

TITLE--RAMAN EFFECT CROSS SECTIONS FOR SOME SINGLE CRYSTALS -U-

AUTHOR--(02)-GORELIK, V.S., SUSCHINSKIY, M.M.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TVERD. TELA 1970, 12(5), 1475-8

DATE PUBLISHED-----70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--RAMAN EFFECT, RAMAN SPECTRUM, SINGLE CRYSTAL, SODIUM NITRATE,  
QUARTZ, DIAMOND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3003/0171

STEP NO--UR/0181/70/012/005/1475/1478

CIRC ACCESSION NO--AP0129427

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0129427

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CROSS SECTIONS OF RAMAN SCATTERING WERE MEASURED IN ORIENTED SINGLE CRYST. CALCITE, NANO SUB3, QUARTZ, AND DIAMOND IN THE EXCITATION OF THE RAMAN SPECTRA BY THE 5145-ANGSTROM LINE OF A POWERFUL AR LASER. THE CROSS SECTIONS FOR CALCITE AND NITRATE ARE CLOSE TO THE VALUES OBTAINED PREVIOUSLY FOR CRYST. POWDERS. THE RAMAN CROSS SECTION FOR THE DELTA SUBNU EQUALS 1332 CM PRIME NEGATIVE1 LINE OF DIAMOND AGREES WITH THE RESULTS OF THE THEORY OF LOUDON.  
FACILITY: FIZ. INST. IM. LEBEDEV, MOSCOW, USSR.

UNCLASSIFIED

USSR

UDC: 621.396.6.049.75(088.8)

TSYRENSHCHIKOV, N. N., YANIN, A. P., GORELIK, V. T.

"A Device for Tinning and Solder-Filling the Contact Channels of Ceramic Circuit Boards"

USSR Author's Certificate No 280592, filed 13 May 69, published 17 Nov 70 (from RZh-Radiotekhnika, No 6, Jun 71, Abstract No 6V287 P)

Translation: A device is proposed for tinning and soldering the contact channels in circuit boards. The device contains a reservoir filled with molten solder covered with a layer of protective liquid, and a conveyor equipped with clamps located above the reservoir. The circuit board is held by the clamps. To increase the productivity of the device, fastened on a rotating lever in the reservoir is a cylindrical tank made from a material which is resistant to wetting by solder and has triangular slots along the upper edge.

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6  
USSR

TAFT, V. A., GIKHMAN, V. Ya., LIL'YAN, V. M., Moscow Institute of Railway Transportation Engineers

"A Converter Which Changes Frequency to an Odd Number of Times"

USSR Author's Certificate No. 155371, Filed 14 Jun 68, Published 8 Apr 70 (from RZh-Radiotekhnika, No 10, Oct 70, Abstract No. 10D308)

Translation: This Author's Certificate introduces a frequency converter which contains a two-tank parametric amplifier formed by output and auxiliary transformers by appropriate connection of their windings. This reduces the dependence of the load current on the load impedance and on the amplitude and frequency of the input signal.  
N. S.

1/1

USSR

UDC 621.372.061:538.56

TAFT, V. A., GORELIK, V. Yu., PANOV, T. P.

"Circuit with Two Variable Parameters"

Tr. Mosk. in-ta inzh. zh.-d. transp. (Works of Moscow Institute of Railroad Transportation Engineers), 1970, vyp. 330, pp 43-47 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A178)

Translation: This article contains an investigation of the problems of studying the stability of a linear electric circuit with periodically varying capacitance and inductance. The characteristic equation of the system is derived the roots of which determine the stability of the system. The bibliography has one entry.

1/1

Theoretical Automation

USSR

UDC: 519.1

GORELIK, Ye. S.

"On the Complexity of Realizing Elementary Conjunctions and Disjunctions in Basis  $\{x/y\}$ "

Moscow, Probl. kibernetiki--sbornik (Problems of Cybernetics--collection of works), vyp. 26, "Nauka", 1973, pp 27-36 (from RZh-Matematika, No 9, Sep 73, abstract No 9V450 by V. Khrapchenko)

Translation: The paper makes a complete study of the problem of complexity of realizing elementary conjunctions and disjunctions by circuits of functional elements in the basis  $\{x/y\}$  which is comprised of a single function of "Schaeffer lines". The given problem had been solved previously (RZhMat 1966, 2V216) for conjunctions and disjunctions containing no negations. In this paper the solution of this problem is found by another simpler method which is readily extended not only to derivative elementary conjunctions and disjunctions but also to the case of realizing these functions by formulas (circuits of functional elements without branchings). The case of circuits of functional elements with any branching is considered concurrently. Formulas are given for minimizing the number of circuit elements with consideration of all possible cases.

1/1

USSR

UDC 621.396.677.833

FALUNIN, A. A. and GORELIKOV, A. I.

"Numerical Method for Calculating Mirror Antennas With Small Electric Dimensions"

Tr. Mosk. energ. in-ta (Works of the Moscow Power Engineering Institute), 1972, vyp.119, pp 65-72 (from RZh-Radiotekhnika, No 11, Nov 72, Abstract No 11 B45)

Translation: An integral equation method is proposed which makes it possible to obtain radiation characteristics with an error of  $\leq 5$  percent for small, plane, parabolic or hyperbolic shaped mirrors. A hyperbolic mirror is studied as an example. The mirror is excited by a half-wave vibrator with a counter-reflector. Radiation patterns of the exciter are obtained for various mirror radii. It is noted that machine time for similar calculation on the BESM-4 computer takes only between 10 and 20 minutes. Original article: four illustrations and five bibliographic entries. N.S.

1/1

- 10 -

USSR

UDC 621.317.725

GORELIKOV, N. I., REYTEBURG, M. Ya., FIGUROVSKIY, Ye. A., TSETENS, V. P.

"Use of Resistive Circuit Elements in High-Speed Automatic Digital Voltmeters"

V sb. Mikronprovod i pribory soprotivl. (Microwire and Resistance Devices --collection of works), vyp. 7, Kishinev, 1971, pp 160-164 (from RZh--Radiotekhnika, No 8, Aug 71, Abstract No 8A299)

Translation: The authors consider the use of serially produced resistive circuit elements in the digital-analog converters of microminiature automatic digital voltmeters. The relations between some characteristics of such voltmeters of the balanced type and the parameters of individual elements of the converters are discussed. Recommendations are presented relative to the use of given elements. A. K.

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USSR

UDC: 621.375.8

BYKOVSKIY, V. F., GORELIN, A. V.

"A Gas Laser"

Moscow, Otkrytiya, izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 4, Feb 71, Author's Certificate No 286819, Division H, filed 26 Dec 68, published 6 Jan 71, p 187

Translation: This Author's Certificate introduces a gas laser which contains a cavity and an active element with electrodes and a discharge channel surrounded by a helix, and coupled through the openings of the helix to a cavity which is free of gas discharge. As a distinguishing feature of the patent, the variety of gases which can be used as the active medium is extended, and the power, efficiency and service life of the device are increased by making the spiral which encloses the discharge in the form of inside-cooled tubing of the "coil" type with an outside surface which does not conduct current.

1/1

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Immunology

USSR

UDC 616.988.21-085.373-092.9

GOREL'KO, K. P., Belorussian Scientific Research Institute of Epidemiology and Microbiology

"Experimental Study of a Short Rabies Immunization Course With a Preparatory or Later Injection of Vaccine"

Minsk, Zdravookhraneniye Belorussii, No 8, 1971, pp 56-60

Abstract: A primer rabies vaccine containing fixed virus has been developed. It can be injected at any time prior to the regular vaccination, and it shortens the regular vaccination from the current 12-18 days to 3-6 days. Tests performed on rabbits indicate that the abbreviated vaccination course given in conjunction with the primer vaccination is as effective as the old method. The primer vaccination is recommended for persons who work with animals and are especially exposed to rabies virus.

1/1

Marine & Shipbuilding

USSR

UDC 532.526

GORELOV, D. N. and SHCHEPANOVSKAYA, G. I. (Novosibirsk)

"A Method of Solving Problems of Flow Past Bodies by a Viscous Liquid at Large Reynolds Numbers"

Moscow, Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza, No 4, 1973, pp 50-58

Abstract: An approximate method is proposed for solving problems of flow past bodies by a viscous liquid at large Reynolds numbers. The method is based upon subdivision of the region of flow into two regions; in each of them is formulated and solved its own boundary-value problem, account being taken of the mutual influence of flow of the liquid in the two regions. In the region adjoining the body, the flow of the liquid is described by the Navier-Stokes equations, while in the outer region the flow is described by the Euler equations. At the boundary of these regions, which is not known in advance, the conditions of continuity of the velocity vector and the stress tensor must be satisfied.

The method is used for solving the problem of flow by a viscous incompressible fluid past a semi-infinite plate. The solution is sought in the form of an asymptotic expansion according to the small parameter  $\varepsilon = Re^{-1/2}$ .

USSR

GORELOV, D. N. and SHCHEPANOVSKAYA, G. I., *Izvestiya Akademii Nauk SSSR, Mekhanika Zhidkosti i Gaza*, No 4, 1973, pp 50-58

Solutions on the order of  $\varepsilon^0$  and  $\varepsilon^1$  are constructed. Results of the calculations are presented. 3 figures. 3 references.

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USSR

UDC 533.6.011:001.24

GORELOV, G. M., TRYANOV, A. YE., PODDUBNOV, V. P.

"Calculating Pressure Losses in a Gas Flow Through a Cylindrical Channel With Friction and Heating"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970, No. 45, pp 79-86 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr 72, Abstract No 4.34.4)

Translation: Gas flow in a rectilinear cylindrical channel under the combined action of friction and heat exchange on the flow is discussed. A formula is obtained for calculating the coefficient of resistance in the case of a uniform supply of heat along the length of the channel under the assumption of a power dependence of density and viscosity on temperature in the region of ideal and real gas. 4 ill., 6 ref. Resume.

1/1

USSR

BASKAKOV, V. V., KURMANBAYEVA, F. M., GORELOV, G. Ya., KALACHENKO, A. A.

"Algorithm and Program for Statistical Analysis"

Mat. Metody v Geol. [Mathematical Methods in Geology -- Collection of Works], No 2, Alma-Ata, 1971, pp 161-176 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V701, by A. Doroshenko).

Translation: A program is suggested for statistical analysis of experimental data, the need for which arises in performance of various applied tasks, particularly in optimization of the process of enrichment of polymetallic ores. The program allows calculation of the following characteristics: mean value; dispersion of the mean; asymmetry and excess indicators; variation factor; mean square error of measurement of these quantities; paired correlation factor; partial and set correlation factors; estimates of reliability of correlation factors and significance of set correlation factor; linear regression equation and value of its coefficients. A program is presented in Ural-2 code, occupying a machine memory volume of 2180<sub>8</sub> locations. 2 biblio. refs.

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1/2 010 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--COMPLEXING OF COPPER WITH HEXAMETHYLENEDIAMINETETRAACETIC ACID -U-

AUTHOR--(02)-GORELOV, I.P., DROZHALKINA, I.G.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 253-6

DATE PUBLISHED--70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COPPER COMPLEX, POLAROGRAPHIC ANALYSIS, ORGANOCOPPER COMPOUND,  
CHEMICAL COMPOSITION, ORGANIC COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/2143

STEP NO--UR/0075/70/025/002/0253/0256

CIRC ACCESSION NO--AP0125726

UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125726

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. COMPLEX FORMATION OF CU WITH HEXAMETHYLENEDIAMINETETRAACETIC ACID (I) WAS STUDIED BY A POLAROGRAPHIC METHOD. CU FORMS A 1:1 COMPLEX WITH I IN A WIDE PH RANGE. THE INSTABILITY CONST. OF CUL PRIME2 NEGATIVE, WHERE H SUB4 L EQUALS I, WAS PK EQUALS 14.47 PLUS OR MINUS 0.10. THIS PK IS LOWER THAN FOR THE CU COMPLEX WITH EDTA (18.9), THUS THE FORMATION OF THIS COMPLEX IS ACCOMPANIED BY THE FORMATION OF A LESS STABLE RING, THEN WITH EDTA.

FACILITY: KALININ POLYTECH. INST., KALININ, USSR.

UNCLASSIFIED

USSR

UDC 535.347.083

KEIMAKH, R. YA., PANKRATOV, V. M., GORELOV, L. V., AKSEIOV, A. S., KRETOV, V.F.

"Automated Device for Measuring and Recording the Spectra of Optical Circular Dichroism"

Moscow, Izmeritel'naya Tekhnika, No 11, 1973, pp 23-24

Abstract: The first Soviet instrument for measuring and recording the spectra of optical circular dichroism is described. This instrument can be used to study the spatial structure of organic and inorganic compounds, materials of biological origin and others having the properties of optical activity. The spectral range of the instrument is 230-600 nm; the measurement ranges in units of optical density are  $150 \cdot 10^{-4}$ ,  $200 \cdot 10^{-4}$  and  $300 \cdot 10^{-4}$  with a sensitivity no worse than one percent of the measurement range. The mathematical description of the operation of the device is presented along with its technical specifications and a brief explanation of its schematic diagram.

1/1

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--MULTIFUNCTIONAL ADDITIVE FOR LUBRICATING OILS -U-

AUTHOR--(05)--KHARCHENKO, L.S., GORELOV, S.A., GORDASH, YU.T., RABINOVICH,  
I.L., CHUSHKINA, R.D.  
CCOUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,578  
REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRAZTSY, TOVARNYE ZNAKI 1970,  
DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--LUBRICATING OIL, CHEMICAL PATENT, THIOL, PHOSPHATE ESTER,  
BENZENE DERIVATIVE, LUBRICANT ADDITIVE

CCNTRCL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/0084

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0127711

UNCLASSIFIED

2/2 018

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AA0127711

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. O, O DIALKYL S BENZOTHAZOLYL  
THIOPHOSPHATE OR O, O DIALKYL SE BENZOTHAZOLYL SELENOPHOSPHATE ARE  
USEFUL AS POLYFUNCTIONAL ADDITIVES IN LUBRICATING OILS.

UNCLASSIFIED

USSR

UDC 533.6.011.8

GORELOV, S. L., KOGAN, M. N.

"Flow of a Rarefied Gas Between Two Parallel Plates"

Uch. zap. Tsentr. aerogidrodinam. in-ta (Scientific Notes of the Central Aerohydrodynamics Institute), 1970, 1, No 6, pp 126-130 (from RZh-Mekhanika, No 10, Oct 71, Abstract No 10B207)

Translation: A Monte Carlo method is used to solve the linear problem of flow of a rarefied gas between two parallel plates under the effect of a temperature gradient lengthwise of the plates. The procedure used is described briefly. The results of flowrate calculations as a function of the Knudsen number are compared with data obtained by other methods and with experimental data. Velocity profiles are presented for various Knudsen numbers. A solution is found for the problem of a velocity jump and flow in a Knudsen layer due to a temperature gradient. The results of calculations of the velocity profile in this case are given. All calculations are done for a model of molecules in the form of Maxwellian spheres whose cross section varies in inverse proportion to the velocity of the molecules. Resumé.

1/1

USSR

UDC 533.6.011.72

GLADYSHEV, M. K., and GORELOV, V. A., Moscow

"Experimental Determination of the Ionization Time Behind a Strong Shock Wave in Air"

Moscow, Izvestiya Akademii Nauk USSR, Mekhanika Zhidkosti i Gaza, No 1, Jan-Feb 73, pp 171-173

Abstract: The ionization rate in air behind strong shock waves was experimentally investigated in the  $v_s=6-14$  km/sec velocity range in an electric discharge shock tube by the method of ion probes, previously used by W. E. Scharfman et al. (AIAA Journal, 1970, Vol 8, No 6). This method has a high space exhaustion making possible a direct registration of the profile of growing concentration of electrons. The investigation results are discussed by reference to a diagram showing shock wave velocity  $v_s$  dependences on products of initial pressure and ionization rate. The good agreement of the results with data of other authors and the presence of a strong maximum at  $v_s \approx 9$  km/sec indicate the correctness of the applied method at  $v_s < 8.5$  km/sec. Two figures, ten bibliographic references.

1/1

USSR

UDC 533.6.011.72

GORELOV, V. A., KIL'DYUSHOVA, L. A., Moscow

"Experimental Study of Certain Parameters of Ionized Air Before a Strong Shockwave"

Mekhanika Zhidkosti i Gaza, No 6, 1971, pp 17-22.

ABSTRACT: A resonant superhigh frequency probe is used to measure the electron density  $n_e$  before a strong shockwave in air. It is demonstrated that the results produced by this method agree well with results produced by ordinary probe methods. The method of electromagnetic induction is used to measure the rate of diffusion of electrons in the zone before the shock-wave.

This work presents an experimental study of the parameters of ionized air before the leading edge of a strong shockwave in an electric discharge shock tube. The resonant system used is a sector of a wire line, short-circuited at each end, placed in the plasma being studied.

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USSR

UDC 533.95:538.4

GORELOVA, M. A., and GORELOV, V. A.

"Measurement of Electron Temperature, Ion Density, and Electrical Conductivity Behind the Front of a Strong Shock Wave by Electrode Methods"

V sb. Teplofiz. svoystva nizektemperaturn. plazmy (Physical Properties of a Low-Temperature Plasma -- Collection of Works), Moscow, "Nauka", 1970, pp 95-100 (from RZh-Fizika, No 4, Apr 71, Abstract No 4G36)

Translation: Results of measurement of electrical conductivity of the air behind the front of a strong shock wave with Mach number  $M = (2-25)$  at  $p = 0.3-2.0$  mm Hg are given. The measurements were made with cold plane electrodes introduced into the flow. Electron temperature and ion density were measured by the double probe method, under the same conditions. Authors abstract.

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USSR

UDC 533,95:583.4

CORELOV, V. A., and FROLOV, Yu. K.

"Measurement of Air Temperature Behind a Shock Wave by the Reversal of Spectrum Method in a Discharge Shock Tube"

V sb. Teplofiz. svoystva nizkoterperatur. plazmy (Physical Properties of a Low-Temperature Plasma -- Collection of Works), Moscow, "Nauka," 1970, pp 48-52 (from RZh-Fizika, No 4, Apr 71, Abstract No 4G46)

Translation: The air temperature behind strong shock waves in a diaphragmless discharge shock tube was measured by a generalized reversal of the spectrum method on the basis of the barium ion line  $\lambda = -4554 \text{ \AA}$ . The temperature measured agrees satisfactorily with the calculated values. Authors abstract.

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1/2 024  
TITLE--PROBE MEASUREMENTS BEHIND THE FRONT OF A STRONG SHOCK WAVE IN AIR  
-U-  
AUTHOR--GORELOV, V.A.  
COUNTRY OF INFO--USSR  
SOURCE--ZHURNAL TEKHNIЧЕСКОГО ФИЗИКИ, VOL. 40, JAN. 1970, P 198-205  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--STRONG SHOCK WAVE, ELECTRON TEMPERATURE, ELECTROSTATICS  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRACTION--1979/1616  
CIRC ACCESSION NO--AP0047938  
STEP NO--UR/0057/70/040/000/0193/0205  
UNCLASSIFIED

2/2 024

CIRC ACCESSION NO--AP0047935

UNCLASSIFIED

PROCESSING DATE--18SEP70

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. DISCUSSION OF THE POSSIBILITY OF MEASURING THE ELECTRON TEMPERATURE BEHIND THE FRONT OF A STRONG SHOCK WAVE IN AIR (AT PRESSURES RANGING FROM 0.5 TO 1.0 MM HG AND AT A SHOCK WAVE MACH NUMBER OF ABOUT 20) BY A DOUBLE ELECTROSTATIC PROBE. THE PROBE POWER SUPPLY VOLTAGE IS SINUSOIDAL, WHILE THE FREQUENCY RANGES FROM 150 TO 200 KHZ. THE TIME REQUIRED TO RECORD THE CHARACTERISTIC CURVE IS 2.5 TO 3.3 MICROSEC. THE RESULTS OF MEASURING THE ELECTRON TEMPERATURE BY THE PROBE METHOD ARE FOUND TO BE IN AGREEMENT WITH RESULTS OBTAINED BY THE METHOD OF SPECTRAL LINE INVERSION. THE ELECTRON TEMPERATURE DISTRIBUTION IN A GAS SAMPLE BEHIND THE SHOCK WAVEFRONT IS DETERMINED. THE PROBLEM OF MEASURING THE ION CONCENTRATION BY THE PROBE METHOD IS CONSIDERED.

UNCLASSIFIED

1/2 048

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--COMPARATIVE EVALUATION OF THE DANGER OF IMPACT PULSES PRODUCED BY  
POLYURETHANE FOAM GASKETS AT TEST TEMPERATURES OF POSITIVE 20DEGREES AND  
AUTHOR--(02)--GURELOV, V.A., DYKIN, V.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. VYSSH. UCHEB. ZAVED. MASHINOSTR. 1970, (2), 24-7

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--SHOCK WAVE, POLYURETHANE RESIN, FOAM PLASTIC, LOW TEMPERATURE  
EFFECT, SHOCK ABSORBER, ELECTRONIC EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FKAME--3006/1116

STEP NO--UR/0145/70/000/002/0024/0027

CIRC ACCESSION NO--AT0134802

UNCLASSIFIED

2/2 048

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AT0134802

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. SHOCK WAVES EXERTED ON  
POLYURETHANE (I) FOAM GASKETS AT NEGATIVE 60DEGREES WERE 50PERCENT MORE  
DANGEROUS THAN THOSE EXERTED ON I AT ROOM TEMP. DETN. OF A MAX. SHOCK  
RESISTANCE ANDDESIGN OF APPROPRIATE SHOCK ABSORBERS (USED TO PROTECT  
ELECTRONIC DEVICES IN TRANSPORT) WERE DISCUSSED.

UNCLASSIFIED

1/2 042 UNCLASSIFIED PROCESSING DATE--27NOV70  
TITLE--MEASUREMENT OF TEMPERATURE BEHIND THE FRONT OF A STRONG SHOCK WAVE  
IN AN ELECTRIC DISCHARGE SHOCK TUBE -U-  
AUTHOR-(02)-GORELOV, V.A., FROLOV, YU.K.  
COUNTRY OF INFO--USSR  
SOURCE--ZH. TEKH. FIZ. 1970, 40(4), 825-32  
DATE PUBLISHED-----70  
SUBJECT AREAS--PHYSICS  
TOPIC TAGS--SHOCK TUBE, TEMPERATURE, MEASUREMENT, STRONG SHOCK WAVE,  
ELECTRIC DISCHARGE  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3002/0104 STEP NO--UR/0057/70/040/004/0825/0832  
CIRC ACCESSION NO--AP0127730  
UNCLASSIFIED

2/2 042 UNCLASSIFIED PROCESSING DATE--27NOV70  
CIRC ACCESSION NO--AP0127730  
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SHOCK WAVE WAS PRODUCED BY A  
CAPACITY DISCHARGE THROUGH A THIN WIRE COVERED WITH BACL SUB2 IN A  
DIAPHRAGM FREE DISCHARGE TUBE. INITIAL AIR PRESSURE IN THE TUBE VARIED  
BETWEEN 0.3 AND 1 TORR, THE SHOCK WAVE VELOCITY ATTAINED 4-9 KM-SEC.  
UNDER THESE CONDITIONS, THE SHOCK WAVE FRONT IS SEPD. FROM THE COLLIDING  
GAS DISCHARGE PLASMA AND A REGION OF SHOCK HEATED GAS EXISTS. THE TEMP.  
WAS MEASURED BY USING THE METHOD OF THE INVERTED SPECTRAL LINE (BA II  
4554 ANGSTROM LINE). THE METHOD WAS EXTENDED TO THE REGION OF LOW GAS  
DS. OF P EQUALS 10 PRIME5 NEGATIVE G-CM PRIME3. TIME RESOLN. WAS 1.5-2  
TIMES 10 PRIME6 NEGATIVE SEC. THE DEPENDENCE OF THE TEMP. ON SHOCK WAVE  
VELOCITY AND THE TIME BEHAVIOR OF THE TEMP. IS SHOWN.

UNCLASSIFIED

USSR

VAKHNOV, R. S., GORELOV, V. P. and TITKOV, V. I.

"Problems of Decomposition of Functional Systems to Logic Systems"

Avtomatiz. Proyektir. RZA [Automation of the Planning of RZA (Expansion unknown -- tr)], Moscow, 1973, pp 77-79 (Translated from Referativnyy Zhurnal Kibernetika, No 9, 1973, Abstract No 9V704).

Translation: A method is presented for automatic production of descriptions of circuits in base elements (BE) from descriptions of circuits containing functional elements (FE). It is based on the use of a catalogue, where each type of FE performing a certain function is compared to a system of BE performing the same function. The possibility of creation of such a method is based on the following assumptions: 1. There is a single language for description of FE in functional plans (FP) and BE in schematic plans (SE). 2. The descriptions of the FP, SP and catalogue are constructed according to a modular principle. 3. An unambiguous relationship is established between the input and output contact identifiers describing the FE and the corresponding description in BE. A single input language allows mixed systems consisting of

1/2

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USSR

Vakhnov, R. S., Gorelov, V. P. and Titkov, V. I., Avtomatiz. Proyektir. RZA, Moscow, 1973, pp 77-79.

FE and BE simultaneously to be described, simplifies the description process and the process of construction of working programs. The modular principle allows gradual incrementing of descriptions of modules and their accumulation and simplifies the process of making changes. The unambiguous correspondence between contact identifiers allows their order to be unlimited.

V. Mikheyev

1/2 010  
UNCLASSIFIED  
PROCESSING DATE--020CT70  
TITLE--FLOTATION OF GOLD ORES BY A FROTH SEPARATION PROCESS -U-  
AUTHOR--(05)-ZELENOV, V.I., UVAROV, YU.P., GUREVICH, R.I., GORELOVA, A.V.,  
KALASHNIKOVA, T.M.  
COUNTRY OF INFO--USSR  
SOURCE--TSVET. METAL. 1970, 43(1), 88-9  
DATE PUBLISHED-----70  
SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY  
TOPIC TAGS--GOLD, ORE, QUARTZ, CHEMICAL SEPERATION, FLOTATION  
CONTROL MARKING--NO RESTRICTIONS  
DOCUMENT CLASS--UNCLASSIFIED  
PROXY REF/FRAME--1989/0745  
STEP NO--UR/0136/70/043/001/0088/0059  
CIRC ACCESSION NO--AP0107287  
UNCLASSIFIED

2/2 010

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0107287

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PURPOSE FO THE PRESENT WORK CONSISTED IN DETG. WHETHER THE FROTH SEPN. TECHNIQUE CAN BE USED FOR THE SEPN. OF AU ORES. THE SEPN. WAS DONE ON A LAB. APP. MIXTS. OF AU AND QUARTZ POWDERS WERE SUBJECTED TO SEPN. WITH THE RESULTS OBTAINED BY MECH. PROCESSES. FLOTATION BY FROTH SEPN. IS BOTH FASTER AND MORE THOROUGH THAN MECH. FLOTATION. ALSO, EXTN. OF AU IS HIGHER BY THE FORMER PROCESS.

UNCLASSIFIED

UDC: 519.21

USSR

MALYSHEV, N. G., GORELOVA, G. V.

"Analysis of the Functional Relationship Between Rayleigh and Normal Distribution Laws"

V sb. Regional'n. nauch.-tekhn. seminar po statist. analizu, modelir. i avtomatiz. kontrolya ob'yektov s konstruktivno-slozhn. struktur (Regional Scientific and Technical Seminar on Statistical Analysis, Modeling and Automation of the Inspection of Objects of Complex Structural Design--collection of works), vyp. 2, Taganrog, 1970, pp 81-93 (from RZh-Kibernetika, No 11, Nov 71, Abstract No 11V37)

Translation: The authors analyze the formula

$$Y(x) = \sqrt{2} V \sqrt{-\ln [1 - \Phi(x)]},$$

where  $\Phi(x)$  is a normal distribution function, and  $V$  is a constant. V. Ivanov.

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USSR

UDC 621.515.592

GORELOVA, L.A., BABUSHKIN, M.M.

"Use Of Probability-Statistical Methods For Predicting The Levels Of The Parameters Of Equipment For Growing Epitaxial Layers"

V sb. Novoye v tekhn. poluprovodn. proiz-va (New Semiconductor Production Technology--Collection Of Works), Voronezh, Voronezh University, 1971, pp 49-58 (from RZh:Elektronika i yeye primeneniye, No 4, April 1972, Abstract No 4869)

Translation: The results are described of work on the use of prediction methods during the conduct of a statistical analysis of the growth processes of equipment for epitaxial layer growth. In the procedure information was processed, including data on the parameters of more than 40 models of units developed in the USSR, USA, Great Britain, and Japan during five years. It is shown that units with cylindrical reaction vessels in which 100 substrates are simultaneously loaded have higher productivity. Probability estimates are given of the parameters of epitaxial units expected in 1975. 7 ref. G.S.

1/1

GORELOVA, L. N.

50: JPRS 55015  
27 Jan 72

UDC: 616-073.75:656.562

INDICES OF QUALITY OF ROENTGENOLOGICAL DIAGNOSES

(31678 - 42 (Pacovsk, Moscow) ~  
Article by L.N. Gorelova, L.N. Gorelova, E.Ye. Proletskiy, Moscow Scientific  
Research Institute of Roentgenology and Radiography (Director: Professor I.G.  
Lopnov), USSR Ministry of Health; Moscow, Sovetskoye Zdravookhraneniye,  
Zhurnal, No. 12, 1971, submitted 22 June 1971, pp 33-37]

The quality of medical care and, in particular, of roentgenological  
services to the people, like the general level of operation of therapeutic-  
prophylactic and radiological research institutions, is inseparable from the  
level of development of science, the state of the material and technical base  
of public health, and quality of management of its different branches. In  
Decree No 577 of the Central Committee of the CPSU and USSR Council of Minis-  
ters, dated 5 July 1968, "On measures for further improvement of public health  
and development of health science in the country," indication that it is  
necessary to devote particular attention to improving the quality of medical  
care for the people and standards of work in public health institutions. In  
accordance with this, public health agencies have done much in the last few  
years to improve roentgenological services for the people.

Along with the increase in quantity of roentgenographic and fluorographic  
units supplied to therapeutic and prophylactic institutions, and in number of  
roentgenologists and x-ray technicians, increased use of roentgenology for  
diagnostic and prophylactic purposes, there have also been qualitative changes  
in the roentgenological service.

It is not only the scientists of specialized scientific research insti-  
tutions (I.M. Yakimovich, V.P. Viktorin, V.I. Petrov) but also some specialists  
in roentgenological practice (S.N. Popov, L.N. Bogdanov, V.I. Mosov, and others)  
who have devoted attention to development of indices of the quality of roentge-  
nological diagnoses. The need to develop such indices was observed in speeches  
by prominent roentgenologists at the 9th All-Union Congress of Roentgenologists  
and Radiologists in Tbilisi (1970).

For many years, the scientific organizational department of Moscow  
Scientific Research Institute of Roentgenology and Radiology has been studying the

USSR

UDC 533.95:538.4

GORELOVA, M. A., and GORELOV, V. A.

"Measurement of Electron Temperature, Ion Density, and Electrical Conductivity Behind the Front of a Strong Shock Wave by Electrode Methods"

V sb. Teplofiz. svoystva nizkotemperaturn. plazmy (Physical Properties of a Low-Temperature Plasma -- Collection of Works), Moscow, "Nauka", 1970, pp 95-100 (from RZh-Fizika, No 4, Apr 71, Abstract No 4G36)

Translation: Results of measurement of electrical conductivity of the air behind the front of a strong shock wave with Mach number  $M = (2-25)$  at  $p = 0.3-2.0$  mm Hg are given. The measurements were made with cold plane electrodes introduced into the flow. Electron temperature and ion density were measured by the double probe method, under the same conditions. Authors abstract.

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USSR

UDC: 536.46:533.6

REZNIK, V. Ye., GORELOVA, N. B.

"Combustion in the Boundary Layers of Wakes of Finite Thickness"

Tr. Kuybyshev. aviats. in-t (Works. Kuybyshev Aviation Institute), 1970, vyp. 45, pp 93-107 (from RZh-Mekhanika, No 5, May 72, Abstract No 5B1091)

Translation: The authors calculate the characteristics of combustion of a homogeneous fuel-air mixture in the boundary layer formed when a jet of heated inert gas is mixed with a cold reactive mixture of non-stoichiometric composition. It is assumed that the velocity, temperature and concentration vary monotonically in the volume moving along the averaged stream line, and that their distribution on the section preceding the ignition point remains the same as in the absence of chemical reactions. It is assumed that the most probable combustion zone will be that where heat release is a maximum. A formula for calculating the coordinate of the critical point is derived by using relations for the quantity of heat released as a result of the reaction and heat lost during exchange with the ambient medium, as well as the balance of enthalpies. Using the experimental data, a series of curves is plotted for the critical dimensions of the hot jet which ensures ignition of a fuel-air mixture of given composition. Bibliography of 3 titles. Yu.F. Dityakin.  
1/1

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USSR

UDC 621.45.05.0

REZNIK, V. YE., GORELOVA, N. B.

"On the Problem of Selecting the Optimal Degree of Blocking in Booster Chambers"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970,  
No. 45, pp 86-92 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr 72,  
Abstract No 4.34.28)

Translation: The optimal degree of blocking from the aspect of combustion stability is obtained as a function of the reduced flow velocity  $\lambda_0$  and the resulting relationship is analyzed. The expression for  $c_{opt}$  as a function of  $\lambda$  and  $Pe$  in conjunction with known expressions relating blocking and loss coefficients make it possible to approach more fully and fundamentally to the meaning of  $c$  in direct-flow booster chambers. 3 ill., 2 ref. Resume.

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USSR

UDC 622.612.1:532.526

REZNIK, V. YE., GORELOVA, N. B.

"Ignition in the Boundary Layers of Wakes of Finite Thickness"

Tr. Kuybyshev. aviats. in-t (Works of Kuybyshev Aviation Institute), 1970,  
No. 45, pp 93-107 (from RZh-Aviatsionnyye i raketnyye dvigateli, No 4, Apr 72,  
Abstract No 4.34.24)

Translation: The problem of the ignition of a fresh heat-air mixture in boundary layers formed in the merging of flows of heated inert gas and a cold reaction-capable mixture of nonstoichiometric composition is solved. It is assumed that the combustion reaction has a second order. Individual results of the theory of turbulent jets and the thermal combustion regime were used in the solution and also the experimental data of M. T. Bortnikov on ignition were included. The critical dimensions of the initial width of the hot stream ensuring ignition of the fresh mixture for various parameters  $P$ ,  $T$ ,  $W$ , and  $\alpha$  at the input were determined. The relationships obtained in the paper can be used in the design of burners of the mixing type. 14 ill., 4 ref. Resume.

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Acc. Nr: **AP0044152**

Ref. Code: UR 0244

PRIMARY SOURCE: Voprosy Pitaniya, 1970, Vol 29, Nr 1,  
pp 61-66

CORRELATION BETWEEN THE CONTENT OF POLYCYCLIC CARCINOGENS  
IN ANIMAL FOOD PRODUCTS AND IN FODDER FOR FARM ANIMALS

N. D. Gorelova, P. P. Dikun, A. P. Dmitrochenko, N. D. Krasnitskaya,  
A. I. Cherepanova, I. A. Shendrikova (Leningrad)

Summary

Rabbits, pigs, cows, chicken and ducks received during different periods of time (up to one year) fodder containing 3,4-benzpyrene. Animals and poultry were sacrificed 24 hours on termination of the experiment and their tissues and organs analyzed for the benzpyrene content. Meat and separately fat, and in some instances also liver, blood, etc were, as a rule, taken for analysis. Milk of experimental cows was used for feedings calves, whose meat, liver and blood were then also subjected to examination. Investigations also covered milk of experimental cows and chicken eggs. Control assays were a common practice as well. Meat and other objects under examination either contained no 3,4-benzpyrene at all, or demonstrated merely its traces. Hence, the presence in fodder of relatively large amounts of benzpyrene does not cause this carcinogen to appear in animal food products. Studies were also made as to the amount of intact benzpyrene passed from the organism of rabbits, cows, calves and chicken.

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REEL/FRA  
19770633

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1/2 007 UNCLASSIFIED PROCESSING DATE--18SEP70  
TITLE--SEPARATION OF SODIUM SULFATE FROM CONCENTRATED SULFATE BRINES BY  
HEATING -U-  
AUTHOR-(05)-BORODULINA, YE.K., GORELOVA, V.A., SPEKTOR, I.E., FURMAN,  
A.A., VOROPANOV, V.S.  
COUNTRY OF INFO--USSR  
SOURCE--KHIM. PROM. (MOSCOW) 1970, 46(1), 38-40  
DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL SEPARATION, SODIUM HYDROXIDE, SODIUM CHLORIDE, SODIUM  
SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--1985/1642

STEP NO--UR/0064/70/046/001/0038/0040

CIRC ACCESSION NO--AP0101697

UNCLASSIFIED

2/2 007

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101697

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. CONCD. SULFATE BRINES FROM  
ELECTROLYTIC NAOH MANUFG. PLANTS CONTAIN NACL 22.0 TO 2.5, NA SUB2 SO  
SUB4 6 TO 7, AND NAOH 0.5 TO 1.5PERCENT; AS A RESULT OF EVAPN. OF 5 TO  
7.5PERCENT OF THE H SUB2 O (BY HEATING TO 100PERCENT) UP TO 40PERCENT OF  
THE NA SUB2 SO SUB4 IS PPTD. AS A SOLID (CONTG. NO NACL). EVAPN. OF A  
LARGER FRACTION OF THE H SUB2 O RESULTS IN A HIGHER DEGREE OF EXTN. OF  
NA SUB2 SO SUB4 WITH THE PPT. BUT IN THAT CASE THE PPT. CONTAINS  
SUBSTANTIAL AMTS. OF NACL. EVAPN. OF

A1234

UNCLASSIFIED

USSR

UDC 8.74

GORELYSHEVA, I. V., KATS, E. KH., LUKHOVITSKAYA, E. S.

"Realizing the Debugging Levels in the ALGOL Complex Translator"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 287-294 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V468)

Translation: The characteristic of the debugging levels in the ALGOL translator which translates from the input language (of the ALGOL type) into the ALMO language is given. Each next level offering greater debugging possibilities by comparison with the preceding one makes the program longer. The zero level means that the translator creates the operating program, that is, a program without debugging capabilities. The first level means that the translator creates a program differing somewhat from the operating program, that is, supplemented by instructions offering the possibility in the case of an emergency halt of outputting "rough" diagnostic information. The second level offers the possibility of obtaining more detailed information in the case of an emergency halt: the text of the operator at which the halt took place is printed out, and the halt output is executed if it is given by the programmer in the debugging instructions. The third level corresponds to a program combining the

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USSR

GORELYSHEVA, I. V., et al., Teoriya yazykov i metody postroyeniya sistem programmir., Kiev-Alushta, 1972, pp 287-294

capabilities of the first and second levels. It is noted that in the future provision will be made in the transistor for a fourth level permitting "expansion" of some interval of operators. By expansion we mean print out of the text of the executed operator and the results of its operation if this operator is an allocation operator.

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USSR

UDC: 629.78.015:533.6.011.55

GORENBUKH, P. I., PROVOTOROV, V. P.

"Experimental Study of Hypersonic Flow about an Axisymmetrical Body with a Break in the Generatrix"

Uch. Zap. Tsentr. Aero-Gidrodinam. In-ta [Scientific Writings of Central Institute of Aerodynamics and Hydrodynamics], 1973, Vol 4, No 1, pp 92-96 (Translated from Referativnyy Zhurnal Raketostroyeniye, No 6, 1973, Abstract No 6.41.104 from the Resume).

Translation: Results are presented from an experimental study of the distribution of pressure over an axisymmetrical, stepped body in a hypersonic stream of helium. Tests were performed in two modes corresponding to values of viscous interaction parameter  $\chi = 0.67$  and  $0.125$ , when perturbations were present in the boundary layer. The perturbations were induced by conical "skirts" with various aperture angles, located in the stern portion of the body. The data produced agreed with numerical calculations performed. 6 figures, 7 biblio. refs.

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GORENBUKH, P. I.

END / R-966 / 5-7-72  
Dec 1972 17

V. HIGH-SPEED FLUID FLOW BODIES

Bezmenov, V. Ya., and P. I. Gorenbukh.  
Application of a frontotranslatory analogy to  
an investigation of explosive wave effects  
on an obstacle in a hypersonic tunnel.  
Uchenyye zapiski Tsentral'nogo aero-  
dynamicheskogo instituta, v. 2, no. 6,  
1971, 48-54. (RZhMekh, 5/72, no. 5V282)

The results are presented of an experimental investigation of shock wave interaction from a blunt body (a plate with a blunt leading edge), with a solid boundary (a plate with a sharp leading edge), in a helium stream at  $M = 23$  to 27. The pressure distribution around the plate with the sharp leading edge behind the incident shock wave is given. By means of a detonation analogy, the results obtained are used to analyze the effect of a plane shock wave on a two-dimensional barrier. It is shown that in this case the experimental results agreed with the calculated data. Counterpressure was not taken into account during the tests.

Tavrikova, M. V. Characteristics of supersonic  
flow around blunt bodies under conditions of  
intensive injection. III: Tрудy II Respublikanskoy  
konferentsii po aerogidromekhanike, teploobmenu  
i masopobemu. Seriya "Aerodinamika boi'shikh  
skorostey", Kiev, Kiyevskiy universitet, 1971,  
112-115. (RZhMekh, 5/72, no. 5B415)

Results are presented of experimental research on the effect of air injection through a permeable body surface on the position and

USSR

UDC 629.78.015:533.6.071.011.55.08

VEZMENOV, V. Ya., GORENBUKH, P. I.

"Application of the Unstable Analogy to the Study of the Effects of an Explosive Wave on a Barrier in a Hypersonic Tube"

Uch. zap. Tsentr. Aero-gidrodinam. In-ta [Scientific Writings of Central Aero-Hydrodynamics Institute], Vol 2, No 6, 1971, pp 48-54, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 4, 1972, Abstract No 4.41.157 from the Resume).

Translation: A method is described for applying the explosive analogy to the flow of a hypersonic gas stream around blunt bodies, for experimental investigation of the effects of the shockwave of a strong explosion on a flat barrier. The effect of the flat shockwave from a strong explosion of a flat charge on a flat barrier is modeled by the action of a shockwave departing from the nose of a blunted flat body on a flat plate. The results of measurement of the distribution of pressure along the plate beyond the falling pressure jump are presented, produced in a helium hypersonic wind tunnel. The plate is set both at zero angle of attack (nonmoving barrier) and at an angle of attack corresponding to the motion of the barrier as  $V_w = 0.25$ . The experimental results are compared with calculated data. 7 Figures; 4 Biblio. Refs.

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1/2 035

UNCLASSIFIED

PROCESSING DATE--13NOV70

TITLE--DETERMINATION OF THE OXYGEN CONTENT IN PURE BERYLLIUM BY PROTON  
ACTIVATION -U-

AUTHOR--(04)--ZADVORNYI, A.S., GURENKO, A.F., SKAKUN, N.A., KLYUCHAREV, A.P.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(2), 346-50

DATE PUBLISHED-----70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY, CHEMISTRY

TOPIC TAGS--PROTON BOMBARDMENT, QUANTITATIVE ANALYSIS, OXYGEN, BERYLLIUM,  
FLUORINE, ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--1994/1879

STEP NO--UR/0075/70/025/002/0346/0350

CIRC ACCESSION NO--AP0115698

UNCLASSIFIED

2/2 035

UNCLASSIFIED

PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0115698

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE REACTION  ${}^{18}\text{O}(\text{P},\text{N}){}^{18}\text{F}$  WAS USED WITH PROTONS OBTAINED FROM A LINEAR ACCELERATOR AND HAVING AN ENERGY OF 9.5 MEV. THE IRRADIATED SAMPLES OF INDUSTRIAL BE AND PURIFIED BE IN AN AR ATM. WERE ANALYZED BY GAMMA SPECTROMETRY. THE O CONTENT WAS 1.65 AND 0.2 PERCENT IN TECH. AND PURE BE, RESP. THE ERROR IS PLUS OR MINUS 12 PERCENT, AND THE SENSITIVITY 10 PERCENT NEGATIVE 2 PERCENT.

UNCLASSIFIED

USSR

UDC 543.52:546.21

GORENKO, A. F., SHAKUN, N. A., SHEVCHENKO, G. M., ZADVORNIY, A. S.,  
BUGAYEVA, N. I., and KLYUCHAREV, A. P.

"Gamma-Activation Analysis of Carbon in Uranium and Thorium"

Moscow, Atomnaya Energiya, Vol 34, No 1, Jan 73, pp 53-54

Abstract: In determining carbon in fissionable elements and materials on their base, a higher sensitivity than by conventional methods results when the carbon is burned out in the oxygen flux from the samples preliminarily irradiated with gamma-quanta. In this case  $C^{11}$ , developing in the  $C^{12}(\gamma, n)$  reaction, is selectively extracted from the active matrix and the amount of collected  $C^{11}O_2$  is determined from the radioactive decay of the carbon isotope by a sensitive nuclear detector. The process of accumulation and decay of  $C^{11}O_2$  molecules, extracted from U, Th, and  $(C_{15}H_{12}O_6)_n$  samples, irradiated by bremsstrahlung of gamma-quanta generated on tungsten converter by a 30-Mev electron bundle, is demonstrated. The activation spectrum in ascarite in determining carbon in uranium carbide is shown. Under the selected activation conditions (electron energy 30 Mev, current 10  $\mu$ A, irradiation 20 min.), the sensitivity in determining carbon in uranium and thorium is  $1.3 \cdot 10^{-7}$  g. Two figures, four bibliographic references.

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1/2 023 UNCLASSIFIED PROCESSING DATE--04DEC70  
TITLE--ON THE POSSIBILITY OF ESTABLISHING THE STOICHIOMETRIC RATIOS BY THE  
RADIOACTIVATION METHOD -U-  
AUTHOR-(03)-ZADVORNI, A.S., GORENKO, A.F., SKAKUN, N.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM.; 25: 867-9(MAY 1970)

DATE PUBLISHED----MAY70

SUBJECT AREAS--CHEMISTRY, MATERIALS, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--STOICHIOMETRIC COMPOSITION, RADIOACTIVITY, CHEMICAL  
COMPOSITION, CARBON, OXYGEN, SYNTHETIC MATERIAL/(U)LAVSAN SYNTHETIC  
MATERIAL

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED  
PROXY REEL/FRAME--3008/1328

STEP NO--UR/0075/70/025/000/0867/0869

CIRC ACCESSION NO--AP0138338

UNCLASSIFIED

2/2 023

UNCLASSIFIED

PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0138338

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. A COMPARISON WAS MADE OF THE CONTENT OF CARBON AND OXYGEN ATOMS PER UNIT OF VOLUME OF SUBSTANCES SIMILAR IN THEIR STRUCTURE. AT THE SAME AMOUNT OF HYDROGEN NO DEVIATION FROM STOICHIOMETRY FOR LAVSAN ((C SUB15 H SUB12 O SUB6) SUBN) AND ITS ANALOG MAILAR WAS OBSERVED. AT A PROTON FLUX OF 0.02 MU A THE SENSITIVITY FOR CARBON AND OXYGEN IS RESPECTIVELY 10 PRIME NEGATIVE3 AND 10 PRIME NEGATIVE2PERCENT (WEIGHT). THE STATISTICAL MEASUREMENT ERROR IS NOT HIGHER THA PLUS OR MINUS 5PERCENT. FACILITY: PHYSICAL-TECHNICAL INST., KHARKOV.

UNCLASSIFIED

USSR

UDC 669.24:548.4

POPOV, L. YE., TERESHKO, I. V., GORENKO, L. K., KONEVA, N. A., KOZLOV, E. V.,  
and KOVALEVSKAYA, T. A., Siberian Physicotechnical Institute imeni V. D.  
Kuznetsov and Tomsk Engineering Construction Institute

"Dislocation Structure of  $\text{Ni}_3\text{Al}$  at Different Stages of Deformation"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 35, No 2, Feb 73, pp 409-  
418

Abstract: This study was conducted to study the change in the nature of dislocation structure in intermetallide  $\text{Ni}_3\text{Al}$  with increasing degree of deformation. Alloys with nickel and 22.9 and 24.0 at.% Al were investigated to which deformations of 1-12% were applied. At small degrees of deformation (1-2%) interlaces of dislocations were extended along slip traces and the average distance between slip traces was 8300 Å. The number of interlaces and dislocation density increased with increased deformation. Plastic deformation of  $\text{Ni}_3\text{Al}$  results in the generation of three types of dislocations two of which are inherently located in octahedral planes and one -- cubic planes. In the deformed alloy numerous wide stacking faults are observed when alloy composition is close to stoichiometric and the energy of the stacking faults amounts to 29 erg/cm<sup>2</sup> for the alloy with 24.0 at.% Al. At high degrees 1/2

USSR

POPOV, L. YE., et al., Fizika Metallov i Metallovedeniye, Vol 35, No 2, Feb 73, pp 409-418

of deformation, dislocation interlacings are noted which form a cellular structure. 9 figures, 22 bibliographic references.

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1/2 020 UNCLASSIFIED PROCESSING DATE--30OCT70  
TITLE--EXPERIMENT IN NITRIDING LARGE MACHINE PARTS -U-

AUTHOR--(02)--GORENKO, V.G., STARCHENKO, YU.P.

COUNTRY OF INFO--USSR

SOURCE--KIEV, TEKHNLOGIYA I ORGANIZATSIYA PROIZVODSTVA, NO 1, 1970, PP  
47-49

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--NITRICATION, RUBBER, PLASTIC, MACHINE TOOL COMPONENT, METAL  
HEAT TREATMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1999/1314

STEP NO--UR/0418/70/000/001/0047/0049

CIRC ACCESSION NO--AP0123273

UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0123273

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE AUTHORS GIVE REGIMES FOR  
NITRIDING LARGE MACHINE PARTS FOR REPROCESSING RUBBER AND PLASTICS.

UNCLASSIFIED

USSR

UDC: 551.508.54

GORENSHTEYN, I. A., AYLAMAZYAN, A. K., KRAVTSOV, V. G.

"True Air Speed Indicator"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 10, Apr 72, Author's Certificate No 332383, Division G, filed 20 Oct 70, published 14 Mar 72, p 17<sup>4</sup>

Translation: This Author's Certificate introduces a true air speed indicator which contains a tube with ionizing and measurement electrodes connected to a generator of periodic pulses and placed in the direction of flow. As a distinguishing feature of the patent, in order to reduce distortions introduced into the flow, the electrodes are located symmetrically in ridged sections in the body of the tube with internal section in the form of a figure formed by two intersecting circles of the same diameter, the distance between the points of intersection being at least ten times less than the diameter.

1/1

Lubricants and Lubrication

UDC: 621.9.079:621.892

USSR

LEVIN, I. M., Candidate of Technical Sciences, VOVK, A. I., IVANOV, V. I., and  
GORENSHTEYN, M. M., Candidate of Technical Sciences

"New Lubricating-Cooling Liquid"

Moscow, Mashinostroitel', No 6, Jun 73, p 31

Abstract: A new lubricating-cooling liquid was developed at the Zhdanovskiy Metallurgical Institute for use in the mechanical processing of aluminum and its alloys (author certificate No 293041). It is a new emulsion of surface-active synthetic substances with the following composition: 0.5-1 percent synthetic wax (complex esters of synthetic fatty acids and high-molecular alcohols), and 0.5-1 percent alkylolamides of C<sub>10</sub>--C<sub>16</sub> fraction synthetic fatty acids. The new lubricating-cooling liquid withstood the drop method corrosion testing, and does not have a disagreeable odor, and is not toxic. Comparative tests were conducted involving the new lubricating-cooling liquid, skipidar, castor oil, and ordinary five percent water emulsion. The MI-1M friction machine was utilized with the specimen roller equipped with the VZ6 grade hard alloy and the other made from the AD-1 grade aluminum. The MPE-2 microscope was used to measure the width of the band of adhering material on the specimens. The results show that the new lubricating-cooling liquid is equivalent in its properties to skipidar. In drilling, the new liquid reduces metal sticking to the cutting edges in compari-

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USSR

LEVIN, I. M., et al, Mashinostroitel', No 6, Jul 73, p 31

son to the five percent emulsion. The new liquid is recommended for the mechanical processing of aluminum and its alloys and is being currently used at metallurgical plants in the cold rolling process.

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USSR

6 UDC: 621.373:530.145.6

GORESLAVSKIY, S. P., YELESIN, V. F.

"Saturation Effect in Semiconductors"

V sb. Vopr. teorii atom. stolknoveniy (Problems of the Theory of Atomic Collisions --collection of works), Moscow, Atomizdat, 1970, pp 157-167 (From REZh-Radiotekhnika, No 7, Jul 70, Abstract No 7D236)

Translation: The authors calculate the coefficient of absorption of a strong electromagnetic wave with regard to the interaction between electrons and optical phonons. A. K.

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**Materials**

USSR

UDC: 669.15.018.44

SHVEDOV, L. I. and GORETSKIY, G. P.

"Investigating Fe-Mn-Al Refractory Alloys"

Minsk, Izvestiya Akademii Nauk BSSR--Seriya fiziko-tekhnicheskikh nauk, No 1, 1972, pp 43-46

Abstract: Noting that the Soviet Union has large stores of manganese and aluminum ores and hence possesses enormous resources for the production of manganese-aluminum steel, the authors investigate the microstructure of Fe-Mn-Al systems and study the most typical characteristics for refractory alloys of this type and their dependence on the chemical composition. The subjects of their research were three polythermal specimens with 4, 7, and 10% Al, and with carbon contents of 0.04-0.06%. In these specimens, the manganese content varied from 0 to 50%. The alloys were made with Armco iron, electrolytic manganese, and type AV-000 Al as burdening material. Results of stretching, plasticity, and refractory tests made on these specimens are given; it is found that alloys containing 0-20% Mn maintain a homogeneous ferrite structure with varying processing temperatures. The authors are associated with the Physico-Technical Institute, Belorussian Academy of Sciences. 1/1

USSR

UDC 669.111

GOREV, K. V., SHEVCHUK, L. A., DUDETSKAYA, L. R., GURINOVICH, V. I.

"Study of the Structure and Graphitizing Annealing of High-Purity Fe-C and Fe-C-Si Alloys"

Izv. AN BSSR, Ser. Fiz-tekhn. Nauk, No 2, Minsk, 1971, pp 49-54.

Abstract: This work presents a study of the structure and graphitization process of high-purity Fe-C and Fe-C-Si alloys. The carbon concentration in the binary alloys studied was 1.5, 2.7, and about 4.2%. In the two groups of ternary alloys studied with carbon contents of about 1.5 and 2.7%, the silicon concentration was varied from 0.1 to 1%. Annealing of pure binary specimens with 2.7 and 4.2% C result in the formation of a few very large segregations of graphite, primarily located along grain boundaries. The addition of silicon facilitated seeding and growth of graphite inclusions not only in microscopic cavities and along grain boundaries, but within the grains as well. The addition of 0.3-0.4% Si greatly facilitates graphitization.

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USSR

UDC 666.018.4

GOREV, K. V., SHVEDOV, L. I.

"New Austenitic Steel With High Aluminum Content"

Izv. AN BSSR, Ser. Fiz-tekhn. Nauk, No 2, Minsk, 1971, pp 55-56.

Abstract: A new heat-resistant, dispersion-hardening steel of the following chemical composition is suggested: C, 0.3-0.45%; Cr, 10.0-12.5%; Ni 11.5-13%; Mn, 6-11%; Al, 3.2-4.3%; V, 1.4-2.0%; Si up to 0.35%; Fe, remainder. The maximum time to rupture of this alloy was produced following hardening from 1,150°C and aging at 650°C for 12 hours plus 750°C for 18 hours. Strength properties were as follows: tensile strength 90-130 kg/mm<sup>2</sup> at 20°; 60 kg/mm<sup>2</sup> at 800°C; proportionality limit -- 85 and 51 kg/mm<sup>2</sup>; true rupture resistance 180 and 72 kg/mm<sup>2</sup>; relative elongation 24 and 6%; relative reduction in area 28 and 20%; at 20°C, the impact toughness was 11-21 kg·m/cm<sup>2</sup>, shear strength 57-70 kg/mm<sup>2</sup>; bending strength 140-171 kg/mm<sup>2</sup>. Long term strength characteristics are also presented.

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USSR

UDC 666.018.4

GOREV, K. V., SHVEDOV, L. I., Physicotechnical Institute of the Academy of Sciences BSSR

"New Austenitic Steel With a Higher Aluminum Content"

Minsk, Izvestiya Akademii nauk BSSR, Seriya fiziko-tekhnicheskikh nauk, No. 2, 1971, pp 55-56

Abstract: The problem was posed of developing a new dispersion hardening steel having high heat resistance and containing as little scarce expensive components as possible. A  $\gamma$ -hard mixture of Fe-Cr-Ni-Mn alloy containing a limited amount of nickel was selected as the basic mixture and the effect of the elements aluminum, vanadium, and carbon on this mixture was studied. Various quantities of aluminum were introduced into an alloy containing 10% Cr, 15% Ni, 5% Mn and the remainder Fe. Experiments showed that with an aluminum content above 3.5% the hardened alloys undergo considerable dispersion strengthening in the annealing process at temperatures of 700-750°C. The maximum effect of aging is achieved with an aluminum content of 5.5%. With a 4-5% aluminum content, the austenitic base of these alloys is achieved with nickel present in quantities of no less

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GOREV, K. V., SHVEDOV, L. I., Izvestiya Akademii nauk BSSR, Seriya fiziko-tekhnicheskikh nauk, No. 2, 1971, pp 55-56

than 12-13%. Raising the manganese content to 10% causes stabilization of the austenite and the austenitic base of the alloys is achieved with a somewhat lower concentration of nickel. In studying the effect of heat treatment conditions on duration of strength and plasticity at high temperatures, the maximum time to breakdown was obtained with samples annealed from 1150°C and aged at 650°C for 12 hours and at 750° for 18 hours. The new heat resistant steel had the following chemical composition: 0.3-0.45% C; 10.0-12.5% Cr; 11.5-13% Ni, 6-11% Mn; 3.2-4.3% Al; 1.4-2.0% V; up to 0.35% Si, and the remainder Fe. The results of tests of the mechanical properties of this steel are given. The fatigue limit at 20°C with a base  $n = 10^7$  cycles was 80 G/mm<sup>2</sup>. The steel is easily processed by pressure in the temperature interval 1200-900°C and cuts very satisfactorily.

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GOREV, K. V., SHEVCHUK, L. A., DUDETSKAYA, L. R., GURINOVICH, V. I., Physico-  
~~technical~~ Institute of the Academy of Sciences BSSR

"Investigation of the Structure and Graphitizing Annealing of Fe-C and Fe-C-Si  
Alloys of High Purity"

Minsk, Izvestiya Akademii nauk BSSR, Seriya fiziko-tekhnicheskikh nauk, No. 2,  
1971, pp 49-54

Abstract: The structure and graphitization process of Fe-C and Fe-C-Si high  
purity alloys was studied. The carbon concentration in the binary alloys was  
1.5, 2.7 and about 4.2% and in two groups of ternary alloys with a carbon content  
of about 1.5 and 2.7% the silicon content varied from 0.1 to 1%. The gravitation  
of samples with a carbon concentration of about 1.5% was investigated in cast  
samples and in samples subjected to homogenization at 980°C for 80 hours in an  
atmosphere of pure helium. The initial structure of these alloys in the cast  
state contained pearlite with separation of secondary cementite along the bound-  
aries of the former grains of austenite and inside grains in the form of needles.  
In the silicon alloys, the structure was relatively finer. The homogenizing an-  
nealing of the steel in aiding the growth of austenite grains and avoiding  
heterogeneities in its composition cause the formation of large iceicles of

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GOREV, K. V., et al, Izvestiya Akademii nauk BSSR, Seriya fiziko-tekhnicheskikh nauk, No. 2, 1971, pp 49-54

secondary cementite in both the siliconless alloy and in alloys with silicon. The microstructure of alloys with a carbon content of 2.7% in the cast state contained converted primary austenite and ledeburite. The amount of the latter increased somewhat as the silicon concentration in the alloy increased. The binary alloy with a carbon content of 4.2% in the cast state had a ledeburite structure; in some alloys there was also observed a small amount of primary cementite in the form of needles. The study of the graphitization process of pure iron-carbon alloys obtained by the carbonization of carbonyl iron by reactor graphite in a vacuum showed that graphitization of these alloys has certain special characteristics as compared with ordinary iron alloys with carbon. Graphitization occurs in places where defects in the crystalline structure are present due to difficulty of nucleation of graphite in pure alloys. The separation of graphite in siliconless and low silicon alloys has a strongly branched form. The number of the separations is not great and they are nonuniformly distributed over a cross section of the casting. All treatments of the alloys that aid in nucleation of graphitization centers lead to a shortening of the duration of graphitization. Silicon especially helps the graphitization of alloys, especially at concentrations of more than 0.4-0.5%. The mechanism for the effect of silicon on the formation and growth of graphite inclusions in Fe-C-Si alloys is still not understood to a sufficient degree. It is only hypothesized that in the presence of silicon carbon atoms are distributed nonuniformly. Silicon apparently forms complexes with iron which drive back the carbon. Conditions are then made easier for the formation of atomic fluctuations necessary for the nucleation of graphite.

777

USSR

UDC 669.3'5':621.78

GOREV, K. V., TOFPENETS, R. L., and VASIL'YEVA, L. A., Physico  
Technical Institute, Academy of Sciences Belorussian SSR

"Study of Recrystallization Annealing of 3.2% Titanium Alloy of  
Copper"

Minsk, Izvestiya Akademii Nauk BSSR, Seriya Fiziko-Tekhnicheskikh  
Nauk, No 4, 1971, pp 33-37

Abstract: A study was made of transformations occurring in  
Cu + 3.2% Ti alloy during annealing at 350, 450, and 600°C. By  
varying the specific electrical resistance and the width of the  
interference lines, the nature of the processes occurring during  
annealing of aged and deformed alloy was determined (the aging  
times were 1 and 5 hours at 400°C with a degree of deformation  
of 0, 20, 30, and 50%, and the annealing, prior deformation  
of the aged alloy by 20 and 30% retards decomposition of the solid  
solution, and deformation by 50% intensifies it. It was proposed  
that the variation of the indicated characteristics takes place  
mainly as a result of completion of aging of the alloy and not  
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as a result of the deformation recovery process. It was pointed out that simultaneously with the variation of the specific electrical resistance, the width of the interference lines of the alloy matrix characterizing both the level of microstresses in the matrix and the degree of inhomogeneity of it with respect to content of alloying element varies. The curves for variation of the line width as a function of annealing time are analogous to the curves for variation of the specific electrical resistance. The variation of the line width is greater the higher the annealing temperature of the alloy. The nature of the curves for an annealing temperature of 600°C indicates the beginning of the recrystallization process.

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